

WE CLAIM:

1. A rear projection display system, comprising:

an image source for projecting an image;

5 a rear reflector; and

a screen configured to display the projected image, wherein the screen includes a plurality of reflective elements configured to angularly discriminate light without regard to polarity by reflecting light incident on the screen from a first angle toward the rear reflector, and to allow light incident on the screen from a second angle to be transmitted
10 through the screen for display.

2. The rear projection display system of claim 1, wherein each reflective element includes a reflective surface, each reflective surface being spaced apart from adjacent reflective surfaces.

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3. The rear projection display system of claim 2, wherein each reflective surface is generally coplanar with the adjacent reflective surfaces.

4. The rear projection display system of claim 3, wherein each reflective elements includes a lens positioned adjacent the reflective surface, the lens being configured to direct light incident on the screen from the first angle onto the reflective surface and to direct light incident on the screen from the second angle between adjacent reflective surfaces.

5. The rear projection display system of claim 2, further comprising a casing, wherein the image source is positioned outside of the casing.

6. The rear projection display system of claim 2, the screen including a plurality of vertical pixels, each of the vertical pixels having a height, wherein each reflective surface is spaced from adjacent reflective surfaces by a distance equal to or less than the height of the vertical pixels.

7. The rear projection display system of claim 1, wherein the plurality of reflective elements includes a plurality of prism elements configured to internally reflect light incident on the screen from the first angle toward the rear reflector, and to transmit light incident on the screen from the second direction.

8. The rear projection display system of claim 7, each of the prism elements having a height and the screen having a plurality of pixels, each pixel having a height, wherein the height of the prism elements are less than or equal to the height of the pixels.

9. The rear projection display system of claim 7, wherein each of the prism elements has a generally pyramidal cross-sectional shape.

10. The rear projection display system of claim 1, the screen having a width,
5 wherein each of the reflective elements extends across the width of the screen.

11. The rear projection display system of claim 1, wherein each of the reflective elements includes a front side and a back side, the front side being reflective and the back side having a dark coloration for improved contrast.

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12. A rear projection display system for displaying an image to a viewer, the rear projection display system having a front side and a back side and comprising:

an image source configured to project an image;

a rear reflector disposed against the back side of the display system; and

15 a selectively reflective screen disposed against the front side of the display system, the screen including a plurality of reflective elements configured to reflect light incident on the screen from an upwardly direction toward the rear reflector and to transmit light incident on the screen from a downwardly direction between the reflective elements.

20 13. The rear projection display system of claim 12, wherein each reflective element of the plurality of reflective elements is oriented diagonally to a vertical plane of the screen.

14. The rear projection display system of claim 12, wherein each reflective element includes a total internal reflection element configured to internally reflect incident light from the upwardly direction toward the rear reflector and to transmit incident light from the downwardly direction toward the viewer.

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15. The rear projection display system of claim 14, wherein the total internal reflection element includes a prism.

16. A rear projection display system, comprising:
a screen configured to display an image to a viewer;
an image source configured to project the image; and
a rear reflective surface configured to reflect light from the image source onto the screen,

wherein the screen includes a plurality of generally planar, spaced-apart reflective elements oriented with respect to a vertical plane of the screen such that incident light from the image source is first reflected from the reflective elements toward the rear reflective surface and then reflected from the rear reflective surface toward the screen for transmission between the reflective elements.

17. The rear projection display system of claim 16, the screen having a plane and the reflective elements having generally planar reflective surfaces, wherein the reflective surfaces are angularly offset from the plane of the screen.

18. The rear projection display system of claim 16, the reflective elements having generally planar reflective surfaces, wherein the reflective surfaces are parallel to one another.

5 19. The rear projection system of 16, the screen having a plane, wherein the reflective elements change angle with respect to the plane of the screen from top to bottom.

20. A rear projection display system, comprising:
10 an image source;
a rear reflective surface; and
a screen, the screen including a lens array and a mirror array positioned adjacent to and coplanar with the lens array, wherein the lens array includes a plurality of lenses configured to direct light incident on the screen from a first angle onto the mirror array to
15 be reflected toward the rear reflective surface, and wherein the screen is configured to direct incident light from a second angle through the mirror array for display to a viewer.

21. An angularly discriminating reflective array, comprising

a light source for projecting light;

a rear reflective surface; and

a plurality of reflective elements configured to angularly discriminate light,

5 wherein light incident on the plurality of reflective elements from a first angle is reflected toward the rear reflective surface, and light incident on the plurality of reflective elements from a second angle is transmitted through the plurality of reflective elements.

22. The angularly discriminating reflective array of claim 21, wherein the light

10 source is an image source and the light projected from the image source is an image.

23. The angularly discriminating reflective array of claim 22, further

comprising a screen disposed adjacent to the plurality of reflective elements, wherein the screen is configured to display the projected image.

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24. The angularly discriminating reflective array of claim 21, wherein each

reflective element includes a reflective surface, each reflective surface being spaced apart from adjacent reflective surfaces.

25. The angularly discriminating reflective array of claim 24, wherein each reflective element includes a lens positioned adjacent the reflective surface, the lens being configured to direct light incident on the plurality of reflective elements from the first angle onto the reflective surface and to direct light incident on the plurality of
5 reflective elements from the second angle between adjacent reflective surfaces.

26. The angularly discriminating reflective array of claim 21, wherein the plurality of reflective elements includes a plurality of prism elements configured to internally reflect light incident on the plurality of reflective elements from the first angle
10 toward the rear reflective surface, and to transmit light incident on the plurality of reflective elements from the second direction.